Assault Schedule

Prepared by the LF, the assault schedule prescribes the formation, composition, and timing of waves landing over beaches. Both assault and on-call serials are reflected.

Landing Craft Employment Plan

This plan is prepared by the ATF and assigns movement of landing craft from ships to satisfy naval and LF requirements. It indicates the number, type, and parent ship of landing craft assets and the ships to which they report, time to report, and period or duration of the attachment. It also allocates boats to boat waves in accordance with the landing diagram.

Amphibious Vehicle Employment Plan

Prepared by the LF, this plan reflects the planned employment of AAVs in landing operations to include their employment after the initial movement to the beach.

Approach Schedule

Prepared by the ATF, this schedule indicates, for each scheduled wave, the time of arrival at and/or departure from the parent ship, the LOD, and the beach.

Assault Wave Diagram

Prepared by the ATF, this diagram reflects the assault waves, as they will appear at H-Hour through the completion of all scheduled waves.

Beach Approach Diagram

This diagram is actually a large-scale chart overlay prepared by the ATF that covers from the beach to 300 to 500 yards seaward of the LOD. The diagram includes the designation and dimensions of landing beaches, LOD, distances to beach, position of primary control ship (PCS), secondary control ship, boat group commander, assistant boat group commander, etc., after the last scheduled wave has landed, the position of personnel and cargo, transfer lanes and boats, and the boat return lanes.

Consolidated Landing and Approach Plan

This plan is nothing more than a consolidation of the landing craft employment plan and the approach plan. It is used in lieu of two separate documents and is prepared by the LF.

Debarkation Schedule

The ship's CO and the COT prepare this schedule jointly. It assigns debarkation stations to all personnel, establishes boat and helicopter teams, and includes units loaded via the well deck.

Landing Plan Documents (Helicopter Assault)

Helicopter Availability Table

This table is prepared early in the planning phase to provide LF and helicopterborne unit commanding officers with basic information with which to determine the employment of available helicopters. It identifies the helicopter units, number of helicopters available for first and subsequent lifts, tentative load capacity, and ships on which the helicopters are to be transported.

Available figures pertain only to D-Day operations and include estimates of expected losses to helicopter availability due to maintenance factors and enemy action.

Originally prepared by the senior helicopter unit commander and submitted to CLF for inclusion in the landing plan.

Heliteam Wave and Serial Assignment Table

This table is prepared by the commander of the helicopterborne unit, assisted by the helicopter unit commander, in coordination with the ship's commanding officer. It identifies each heliteam

with its assigned serial number and specific serial numbers within the flight and wave. All movement/landing categories are included with scheduled waves organized into helicopter waves and listed in numerical sequence and on-call and nonscheduled serials listed in the planned sequence of landing following the scheduled waves. If necessary, prepackaged supplies may also be serialized and included. This document shows what personnel, supplies, and equipment will be loaded on a specific aircraft. Loads for each helicopter are defined by—

- Tactical units (troop units).
- Supplies and equipment. The average combat load is 240 pounds for each Marine. Any particularly heavy equipment or supplies are listed separately in this column. The weight column ensures that troop units do not exceed maximum helicopter payloads.

Preparations are necessary to determine effective use of helicopters, detail lift requirements, and develop a planned sequence of debarkation and serialization of the units involved.

Helicopter Landing Diagram

This diagram is a graphic depiction of the approach and retirement lanes from the helicopter transport area to the LZs. It includes the measures established to control the helicopter movement. Such details and remarks, as are necessary, will also be shown (such as flight altitude and width of lanes).

The diagrams are prepared by the senior helicopter unit commander in coordination with the cognizant helicopter transport group/unit commanders and are submitted through the chain of command to the CATF for approval and coordination with planned supporting fires.

Control measures included in the helicopter landing diagram follow. See figure 4-1.

Landing Zones

LZs are specified ground areas for landing assault helicopters to embark or debark troops and/or cargo. Each LZ may contain one or more landing sites. They are usually designated by a code name, traditionally a bird.

Landing Site

A landing site is a subdivision of an LZ where single flights or waves of helicopters land. Landing sites do not have to be geographically continuous. They are usually designated by a color.

Landing Point

This is the point where one helicopter may land and is designated by a two-digit number.

Approach and Retirement Routes

These routes consist of a track or series of tracks relative to the earth's surface over which helicopters move to and from a specified LZ in coordination with fire support plans. They are located so as not to interfere with the waterborne movement and are designated by the names of states.

Wave Rendezvous Points

Wave rendezvous points (RPs) are positions designated for assembling loaded helicopters when conducting operations. These points are located at a given altitude and position relative to the departure point (DP).

Departure Point

The DP is an air control point at the seaward end of the helicopter approach route system from which helicopter waves are dispatched along the selected approach route to LZ.

Penetration Control Point

The penetration control point (PCP) is a point along helicopter approach route at which helicopter waves penetrate a hostile coastline during the STS movement. Once an aircraft reaches

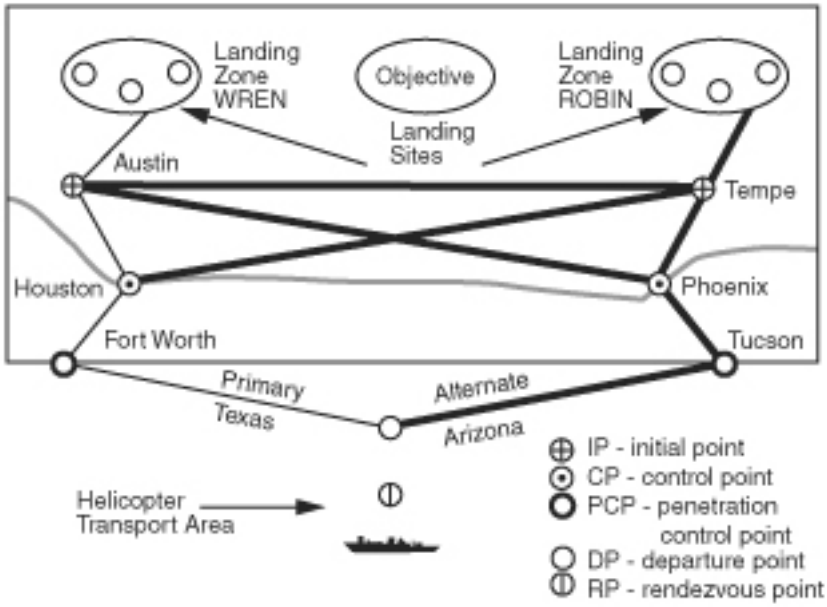

Figure 4-1. Helicopter Landing Diagram.

the PCP, it is considered "Feet Dry" and over dry land.

Control Point

Control point (CP) is a position marked by a buoy, ship or craft, electronic device or conspicuous terrain feature. It is used as an aid to navigation and to control helicopters en route to their designated LZ. Usually CPs are designated by the names of cities within the state used for the approach and retirement routes.

Initial Point

The initial point (IP) is an air control point in the vicinity of a LZ from which individual flights of helicopters are directed to the prescribed landing sites.

Break-up Point

The break-up point is an air control point at which helicopters returning from a LZ break formation and are released to return to individual ships or dispatched for other employment. It may be the same point, geographically, as the departure point.

Helicopter Employment and Assault Landing Table

This table is a detailed plan for the movement of helicopterborne troops, equipment, and supplies. It provides the landing timetable for the helicopter movement and indicates the assignment of specific troop units to specific numbered flights and their HLZ/landing sites. It is the basis for the helicopter unit's flight schedules and the control of helicopter movement by the appropriate air control agency. The commander of the helicopterborne unit and the associated helicopter unit commander prepare the HEALT.

Each successive echelon of command makes necessary changes and consolidates the appropriate tables. Once complete, the final approving authority prepares/publishes the final approved consolidated tables.

Upon publication, lower echelons publish extracts pertaining to their units. Close coordination between the helicopter direction center (HDC) and the embarked LF elements is required to ensure execution of the desired plan.

Table 4-1. Helicopter Load Panning Data.

AIRCRAFT TYPE	COMBAT LOADED TROOPS	ADMIN TROOPS (PMC)	INTERNAL CARGO WEIGHT (lbs)	EXTERNAL CARGO WEIGHT (lbs)
CH-53E	24	37	15,000	36,000
CH-53D	24	37	8,000	24,000
UH-1N	06	08	1,400	1,400
CH-46	12	12	3,000	3,000
CH-47	31	31	50,000	25,000
SH-60	11	20	22,000	8,000
MV-22	24	24	20,000	15,000
Capabilities are for planning purposes only. Maximum internal or external load capabilities may be lower depending on weather conditions, aircraft fuel load, and limitations of specific aircraft type, model, and series.				

Planning for Wave, Beach, and Surf Conditions

Selecting Beaches

Within limits set by strategic and tactical considerations, landing areas should be selected with reference to surf and beach conditions under exposure to different wave conditions. After the hydrography of each area has been obtained, wave refraction diagrams should be drawn to show the variations in surf conditions along the beach for wave periods and deep-water directions over the entire possible range. Alternative landing plans for each landing area will be desirable if the analysis shows markedly different surf conditions under exposure to waves of different possible directions and periods.

Selecting Ships and Vehicles

Selecting ships and landing craft with relation to anticipated surf conditions should be completed during the early planning stage of an operation. It is possible to plan for surf at this stage only on a statistical basis, but the probability of light or heavy surf action at the time and place of the landing should also be considered. On shores noted for severe surf, there are some days of relative calm. On shores where the surf is normally light, there are usually some days of heavy surf.

Key information that should be obtained during the planning phase of a surfaceborne operation includes:

- Prevailing winds and surf.
- Refraction diagram and currents.
- Prevailing sea and swell tides.
- Beach slope and materials.
- Beach irregularities.

While the above information satisfies planning phase requirements, it does not meet the data requirements for D-Day. The following data is essential for D-Day operations. This information may be provided to planners by pre-assault forces using standardized reporting procedures.

- Surf and swell conditions.
- Depth of water and beach slope.
- Beach features (bars, troughs).
- Width of the surf zone.
- Significant breaker height.